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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/515,239	03/06/2000	Ju Cheon Yeo	8733.20093	7949

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EXAMINER	
KUMAR, SRILAKSHMI K	

ART UNIT	PAPER NUMBER
2629	

DATE MAILED: 10/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/515,239	YEO ET AL.	
	Examiner	Art Unit	
	Srilakshmi K. Kumar	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *July 26, 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

The following office action is in response to the Request for Continued Examination filed on July 24, 2006. Claims 1-20 are pending. Claims 1 and 11 are amended.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-5, 7-15, and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahan (GB 2,325,329 A) and in further view of Silverstein et al (US 4,800,375).

As to independent claims 1 and 11, Ahan disclose a liquid crystal device and a method for driving a liquid crystal display device (Fig. 2), having a demultiplexer unit (Fig. 2, item 54) connected between a data driving circuit (40) and a plurality of data lines (DL1-DL2400) on a liquid crystal panel, the demultiplexer unit (54) distributing color data signals from any one of the output terminals of the data driving circuit to the plurality of data lines on the liquid crystal panel (Fig. 2, page 8, lines 24-page 9, lines 29 and page 6, line 31-page 7, line 5), the method comprising, classifying color data signals to be applied to the demultiplexer unit from the data driver circuit by colors (Fig. 2, page 8, lines 24-page 9, lines 29 and page 6, line 31-page 7, line 5); Ahan teaches providing color data signals to the demultiplexer unit by the data driver circuit (page 9, lines 9-29).

Ahan do not teach providing the color data signals having the same color and do not teach consecutively providing the color data signals having a same color to the data lines by the demultiplexer unit before applying a different color. Silverstein et al disclose in Fig. 2b, and in col. 2, lines 64-col. 3, lines 12, where color data signals having a same color are consecutively provided to the data lines before applying a different color. It would have been obvious to one of ordinary skill in the art to incorporate the feature of Silverstein et al into that of Ahan as they teach a method of driving flat panel type color matrix displays in which a discretely addressable matrix of red, green and glue (RGB) picture elements are used to generate full color images. The system of Silverstein et al is advantageous as it combats insufficient pixel density and asymmetrical angular resolution such as image coarseness and color "fringing or aliasing"and reduces the number of scanning lines, thus reducing power consumption and expense (col. 1, lines 16-32, 59-col. 2, lines 4).

As to claims 2 and 12, limitations of claims 1 and 11, and further comprising Ahan discloses wherein the color data signals are applied to the data lines on the liquid crystal panel in a combination of sequences of color data signals of red, green and blue (page 6, line 31-page 7, line 5).

As to claims 3 and 13, limitations of claims 2 and 12, and further comprising Ahan discloses wherein the color data signals are applied to the data lines on the liquid crystal panel in a sequence of red, green and blue signals (page 6, line 31-page 7, line 5).

As to claims 4, 5, 14 and 15, limitations of claims 2 and 12, and further comprising, Ahan does not disclose where the color data signals are applied to the data lines on the liquid crystal panel in a sequence of green, blue and red signals or blue, red and green signals.

Silverstein et al disclose in Fig. 3B a color sequence different from RGB. It would have been obvious to one of ordinary skill in the art to employ the use of any color sequence as Silverstein et al suggest in the system of Ahan so as to generate full color images. The system of Silverstein et al is advantageous as it combats insufficient pixel density and asymmetrical angular resolution such as image coarseness and color "fringing or aliasing" and reduces the number of scanning lines, thus reducing power consumption and expense (col. 1, lines 16-32, 59-col. 2, lines 4).

As to claims 7 and 17, limitations of claims 1 and 10, and further comprising Ahan discloses wherein the demultiplexer unit includes a plurality of demultiplexers as shown in Fig. 2, item 54, DMP1-DMP800.

As to claims 8, 10, 18 and 20, limitations of claims 7 and 17, and further comprising Ahan discloses wherein each of the plurality of the demultiplexers are connected to at least five or in multiple of six data lines on the liquid crystal panel in Fig. 2, where Ahan shows the data lines (DL1 to DL2400) connected to the demultiplexer (54), where the plurality of demultiplexers are connected to three data lines (Fig. 2, DMP1 is connected to DL1, DL2 & DL3).

As to claims 9 and 19, limitations of claims 7 and 17, and further comprising Ahan discloses wherein each of the plurality of demultiplexers is connected to an odd number of data lines as shown in Fig. 2, where each demultiplexer, DMP1 is connected to three data lines DL1-DL3.

3. Claims 6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahan in view of Silverstein et al as applied to claims 1 and 11 above, and further in view of Hiroki (US 6,628,253).

As to claims 6 and 16, limitations of claims 1 and 11, and further comprising Ahan and Silverstein et al do not disclose wherein the classifying step includes arranging the color data signals according to a sequence of dot inversion system where each contiguous pixel of liquid crystal panel has a reverse polarity. Hiroki in col. 3, line 41-col. 4, line 9, discloses wherein the classifying step includes arranging the color data signals according to a sequence of dot inversion system where each contiguous pixel of liquid crystal panel has a reverse polarity. It would have been obvious to one of ordinary skill in the art to incorporate the feature of arranging the color data signals according to a sequence of dot inversion system where each contiguous pixel of the liquid crystal display panel has a reverse polarity as shown by Hiroki into that of Ahan as modified by Silverstein et al. The feature of arranging the color data signals according to a sequence of dot inversion system where each contiguous pixel of the liquid crystal display panel has a reverse polarity is advantageous as it prevents the deterioration of the liquid crystal material, eliminates display but and produces the best images (Hiroki, col. 3, lines 41-46).

Response to Arguments

4. Applicant's arguments filed July 26, 2006 have been fully considered but they are not persuasive.

With respect to applicant's arguments of where the combination of Ahan and Silverstein do not disclose the limitation of where "the data driver consecutively provides the color data signals having the same color the demultiplexer unit", examiner, respectfully, disagrees. Ahan

teaches a display device comprising a data driver (40) and a demultiplexer unit (54) to provide color data signals to the data lines for display. Ahan does not disclose where the color data signals having the same color are provided to the demultiplexer unit by the data driver. The prior art of Silverstein et al teaches where the data driver supplies color data signals having the same color as shown in col. 2, lines 64-col. 3, line 12 and Fig. 2B. Silverstein et al clearly teaches where the color data signals are applied as R-R, G-G, then B-B, etc., therefore teaching where the color signals are the consecutively the same and provided.

Further, the combination of Ahan in view of Silverstein et al is proper, as they teach a method of driving flat panel type color matrix displays in which a discretely addressable matrix of red, green and glue (RGB) picture elements are used to generate full color images. The motivation for combining Ahan with Silverstein can be shown in Silverstein et al, col. 1, lines 16-32, 59-col. 2, line 4, where the system of Silverstein et al combats insufficient pixel density and asymmetrical angular resolution such as image coarseness and color "fringing or aliasing" and reduces the number of scanning lines, thus reducing power consumption and expense (col. 1, lines 16-32, 59-col. 2, lines 4).

As shown above, the limitations set forth are clearly taught by the combination of Ahan in view of Silverstein et al in claims 1-5, 7-15, and 17-20, and further in view of Hiroki for claims 6 and 16.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Srilakshmi K. Kumar whose telephone number is 571 272 7769. The examiner can normally be reached on 9:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on 571 272 3638. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Srilakshmi K. Kumar
Examiner
Art Unit 2629

SKK
October 12, 2006